399-2-21 (C6201)
Log Data Report

Borehole Information:

Borehole:	399-2-21 (C6201)		Site:	300-FF-5	
Coordinates (WA St Plane)		GWL[1] (ft):	26.5	GWL Date:	06/15/08
North (m)	East (m)	Drill Date	TOC[2] Elevation	Total Depth (ft)	Type
116061.9	594263.3	06/12/08	Unknown	62	Sonic

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded Steel	1.2	7 5/8	6 7/8	3/8	-1.2	58.0

Borehole Notes:

Casing data and total depth was reported by the site geologist. Logging engineer measured depth to water with an e-tape. Casing diameters were measured using a steel tape and rounded to the nearest 1/16". The zero reference was the ground surface.

Logging Equipment Information:

Logging System:	Gamma 4 L		Type: / Serial No.:	60% HPGe SGLS / 47TP32211A
Effective Calibration Date:	12/31/07	Calibration Reference:	HGLP-CC-027	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Logging System:	Gamma 4 H		Type: / Serial No.:	NMLS / H310700352
Effective Calibration Date:	11/06/07	Calibration Reference:	HGLP-CC-021	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat
Date	06/16/08	06/16/08
Logging Engineer	Pearson	Pearson
Start Depth (ft)	62.0	3.0
Finish Depth (ft)	0.0	9.0
Count Time (sec)	200	200
Live/Real	R	R
Shield (Y/N)	N	N
MSA Interval (ft)	0.5	0.5
Log Speed (ft/min)	N/A	N/A
Pre-Verification	DL451CAB	DL451CAB
Start File	DL451000	DL451125
Finish File	DL451124	DL451137
Post-Verification	DL451CAA	DL451CAA
Depth Return Error (in.)	0	N/A
Comments	No fine gain adjustments made.	Repeat Section

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	3	4 Repeat
Date	06/15/08	06/15/08
Logging Engineer	Pearson	Pearson
Start Depth (ft)	0.0	3.0
Finish Depth (ft)	26.5	6.0
Count Time (sec)	15	15
Live/Real	R	R
Shield (Y/N)	N	N
MSA Interval (ft)	0.25	0.25
Log Speed (ft/min)	N/A	N/A
Pre-Verification	DHF22CAB	DHF22CAB
Start File	DHF22000	DHF22107
Finish File	DHF22106	DHF22119
Post-Verification	DHF22CAA	DHF22CAA
Depth Return Error (in.)	N/A	0
Comments	None	Repeat Section

Logging Operation Notes:

Data were collected using Gamma 4, HO 68B-3573. SLGSL pre- and post-survey verification measurements were acquired in the Amersham KUTh-115 field verifier. Maximum logging depth was 62.2 ft before the sonde un-weighted. A centralizer was installed on the sonde. NMLS pre- and post-survey verification measurements were acquired in the standard field verifier. Maximum logging depth achieved was 26.5 ft.

Analysis Notes:

Analyst:	LEGLER	Date:	08/29/08	Reference:	GJO-HGLP 1.6.3, Rev. 0

The SGLS pre- and post-survey verification measurements met the acceptance criteria for the established system, but the verification file DL451CAB had measurements above the upper control limit for counts per second (cps) for the 2615 keV energy line. The NMLS pre- and post-verification measurements met the acceptance criteria for the established system, but the verification file DHF22CAB had measurements above the upper control limit for counts per second (cps). A correction for a 3/8-in. thick casing was applied to spectral log data (SGLS) from ground surface to total logged depth of the borehole. A water correction was also applied from 26.5 ft to total logged depth of borehole.

SGLS spectra were processed in batch mode in APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated using an EXCEL template identified as G4LDec07.xls using an efficiency function and corrections for casing, dead time and water as determined by annual calibrations. NMLS spectra were processed in batch mode in APTEC SUPERVIOR to compile counts. Count rates were calculated using an EXCEL template identified as G4HNov07.xls.

Moisture data are presented in counts per second (cps) because no calibration data exists for 6 7/8-in. inner diameter casing.

Results and Interpretations:

Cs-137, U-235, U-238 (Pa-234m), and Co-60 were detected at various depths in this borehole. With the exception of Co-60, inspection of these spectra indicates that these detections are statistical fluctuations associated with the processing software. Co-60 was detected at 7 – 8 ft, with a maximum concentration of 0.9 pCi/g at 7.5 ft.

The KUT plots indicate good repeatability. Moisture plots indicates some variability.

List of Log Plots:

Depth Reference is ground surface

Manmade Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma & Dead Time
Total Gamma & Moisture
Manmade Repeat Section
Repeat Section of Natural Gamma Logs
Moisture Repeat Section

[1] GWL – groundwater level
[2] TOC – top of casing

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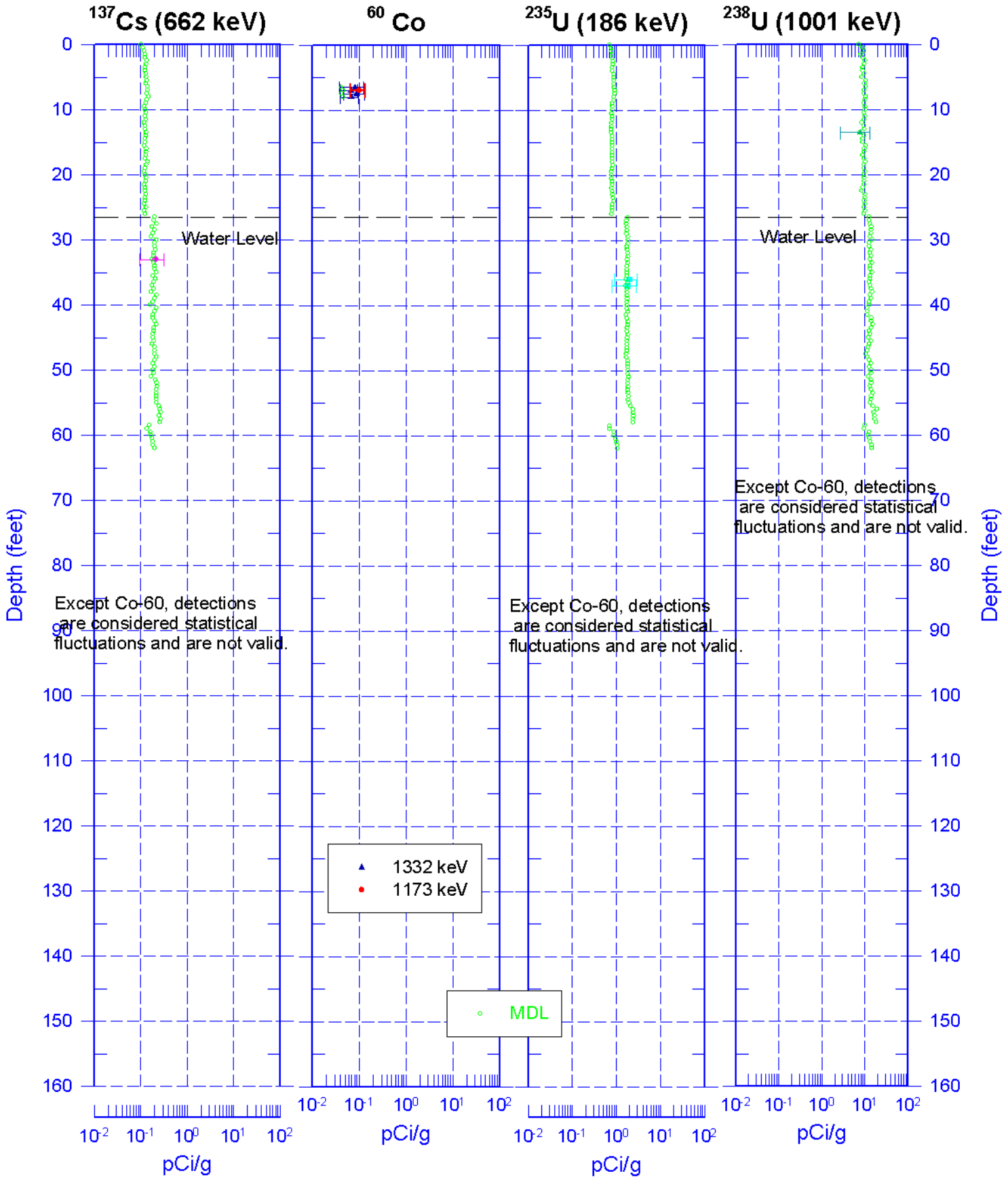
399-2-21 (C6201)
Manmade Radionuclides



Zero Reference - Ground Surface

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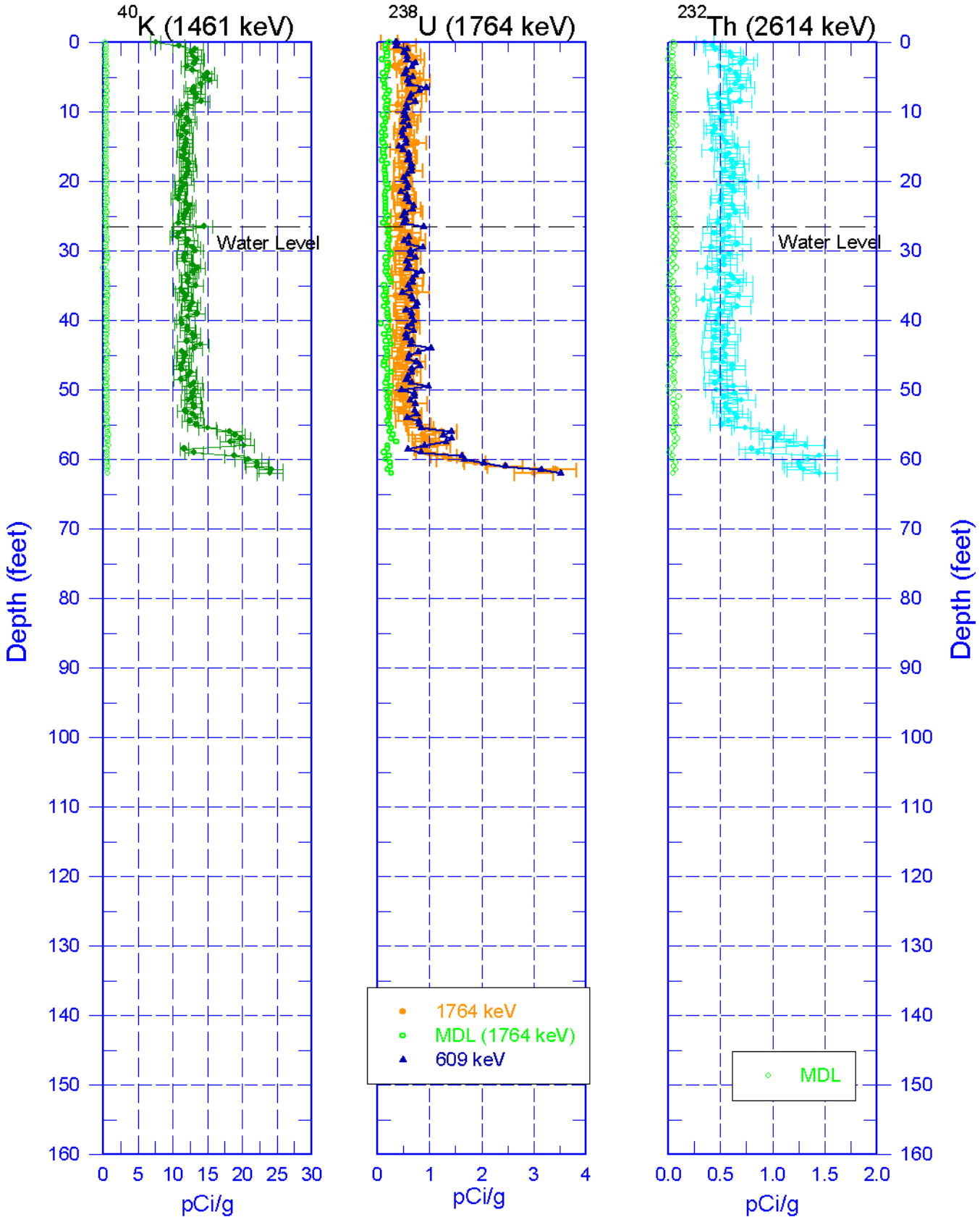
399-2-21 (C6201)
Natural Gamma Logs



Zero Reference - Ground Surface

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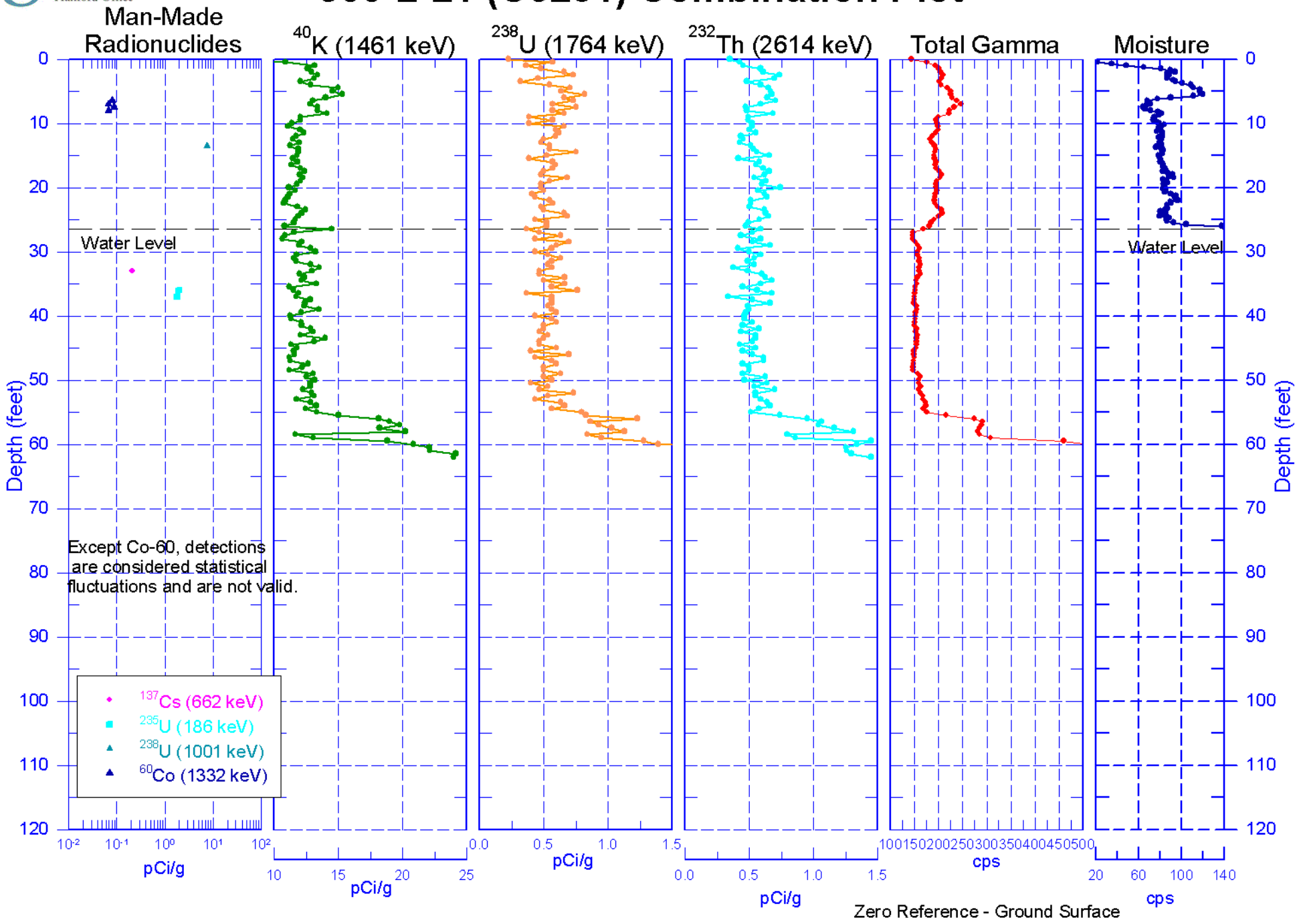
399-2-21 (C6201) Combination Plot



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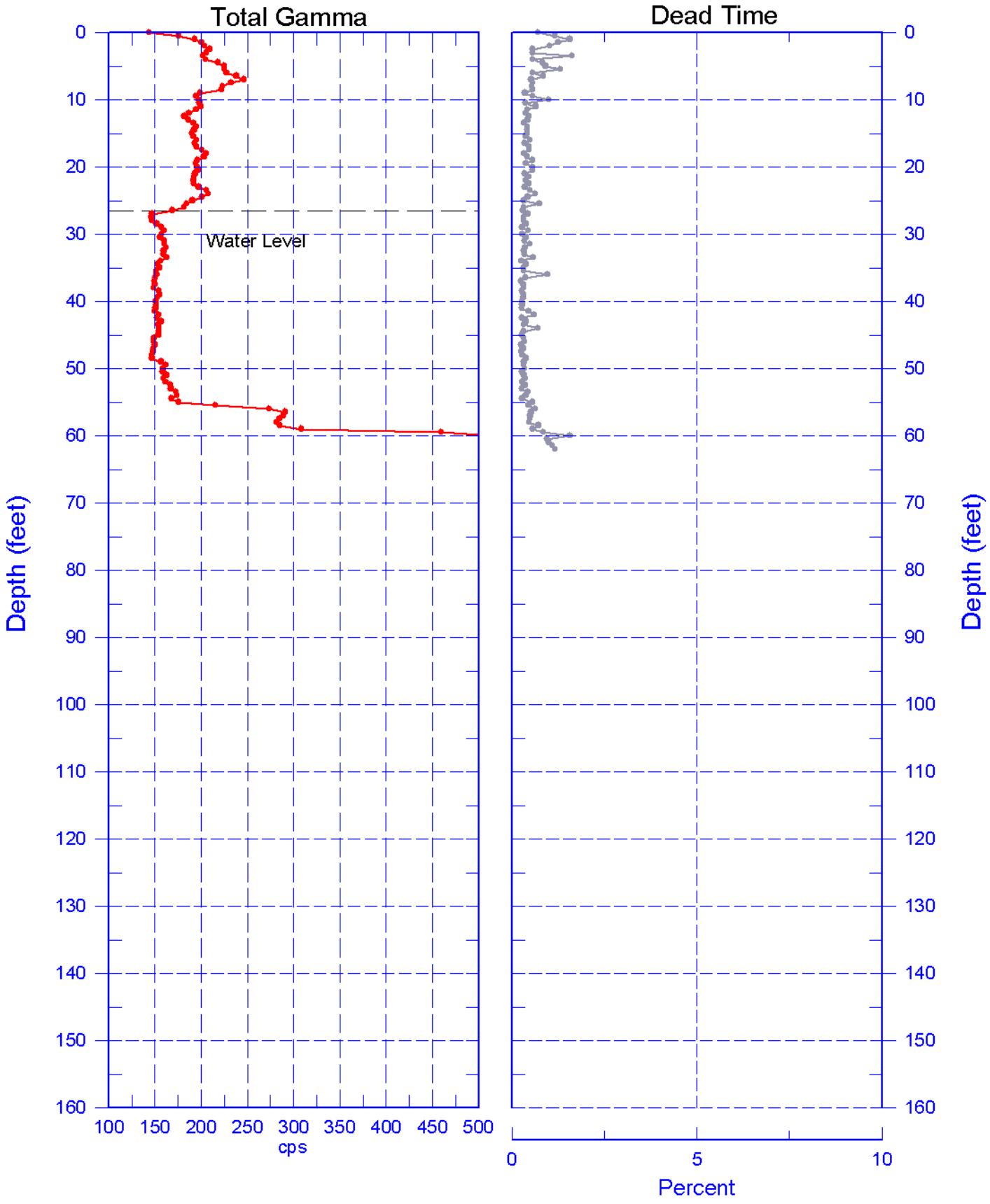
399-2-21 (C6201)
Total Gamma & Dead Time



Reference - Ground Surface

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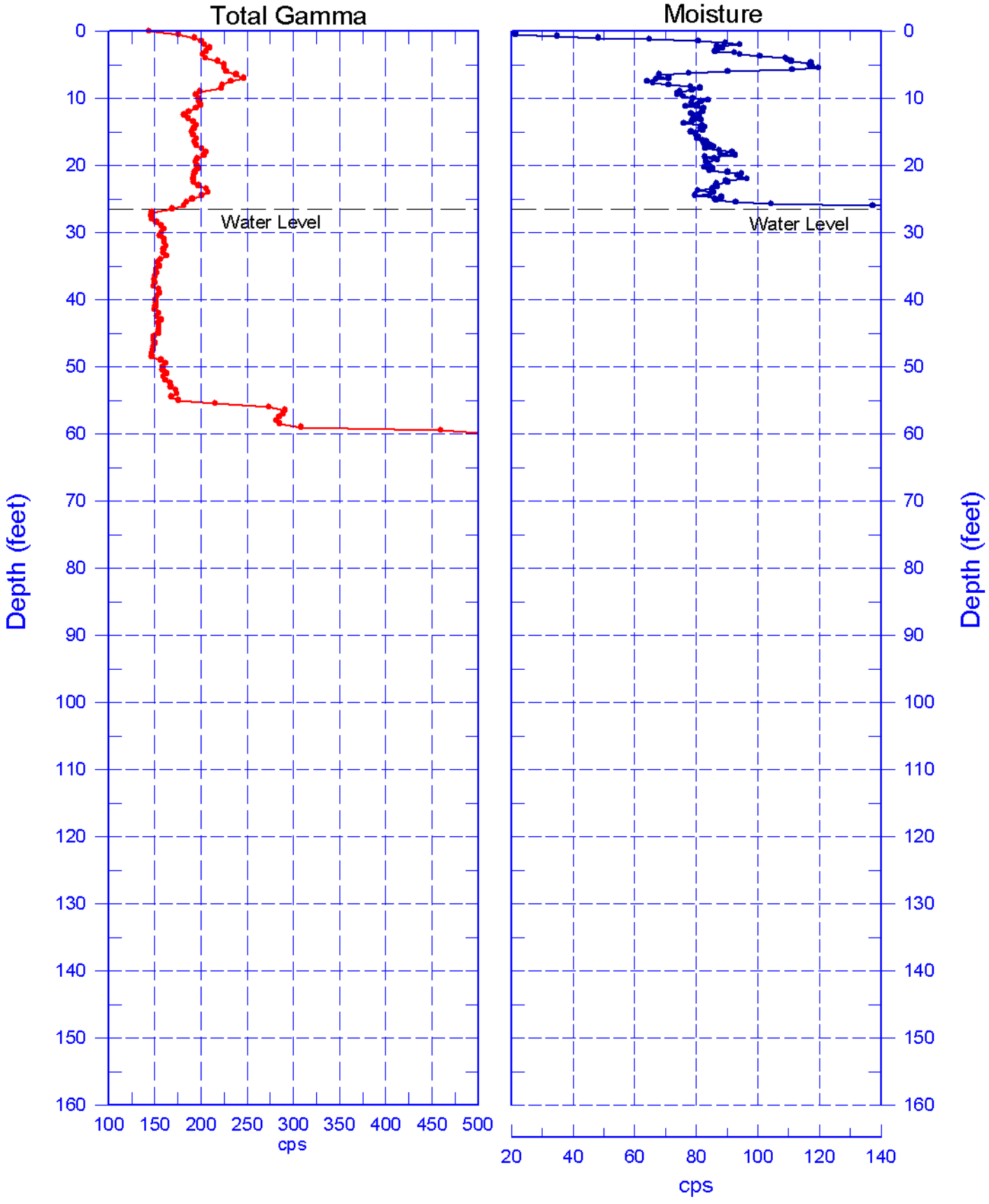
399-2-21 (C6201)
Total Gamma & Moisture



Reference - Ground Surface

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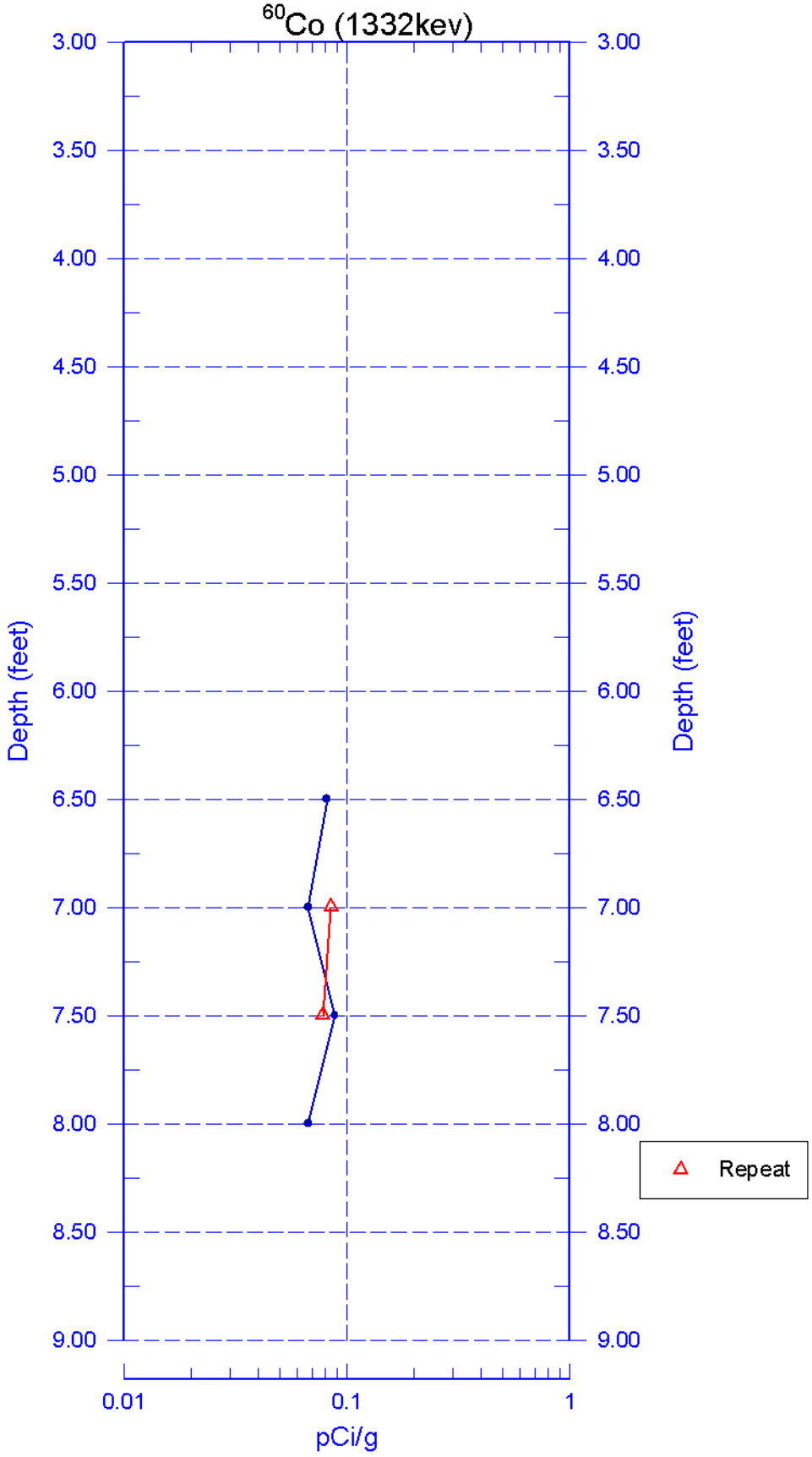
399-2-21 (C6201)
Manmade Repeat Section



Reference - Ground Surface

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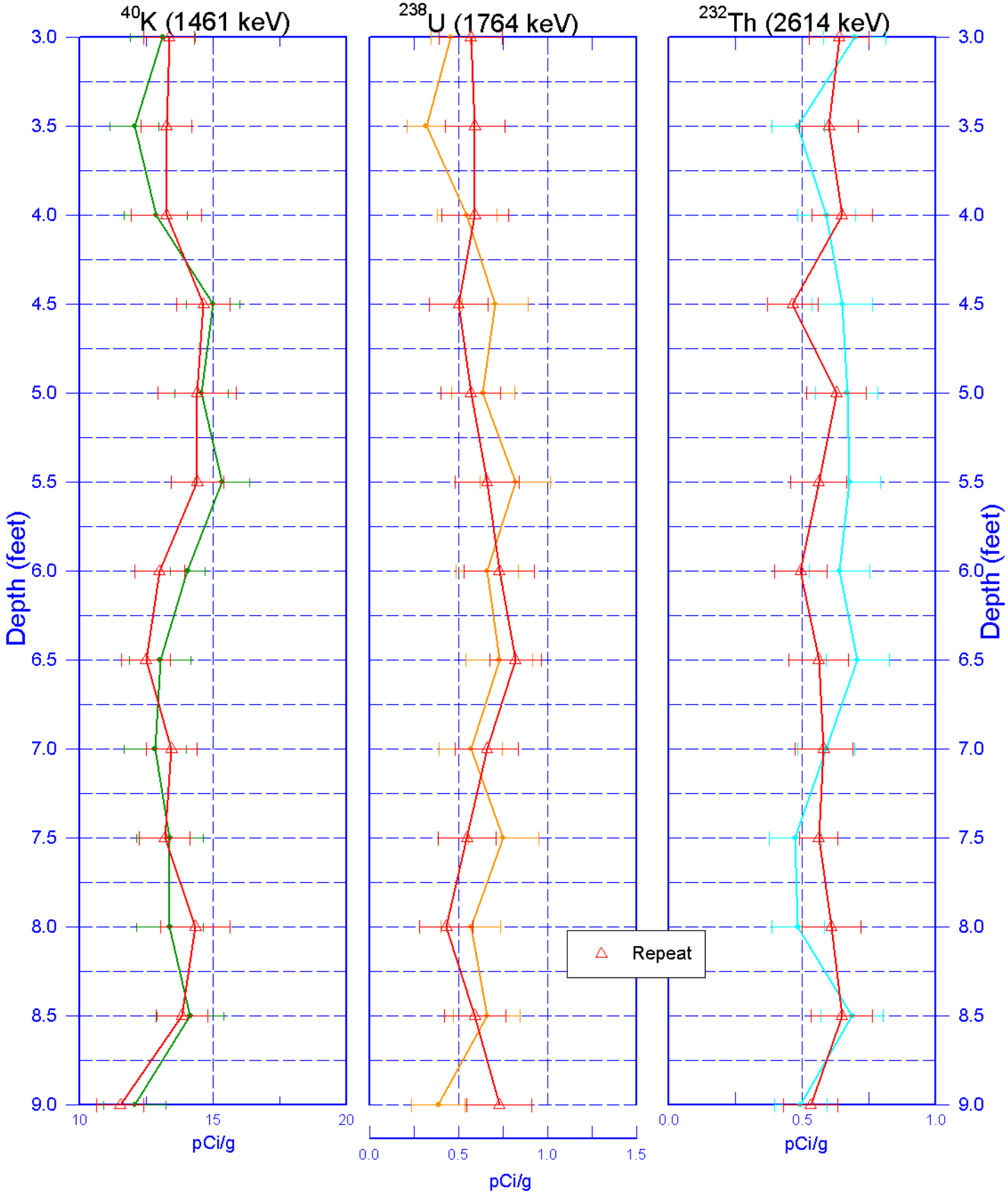
399-2-21 (C6201)

Repeat Section of Natural Gamma Logs



Zero Reference - Ground Surface

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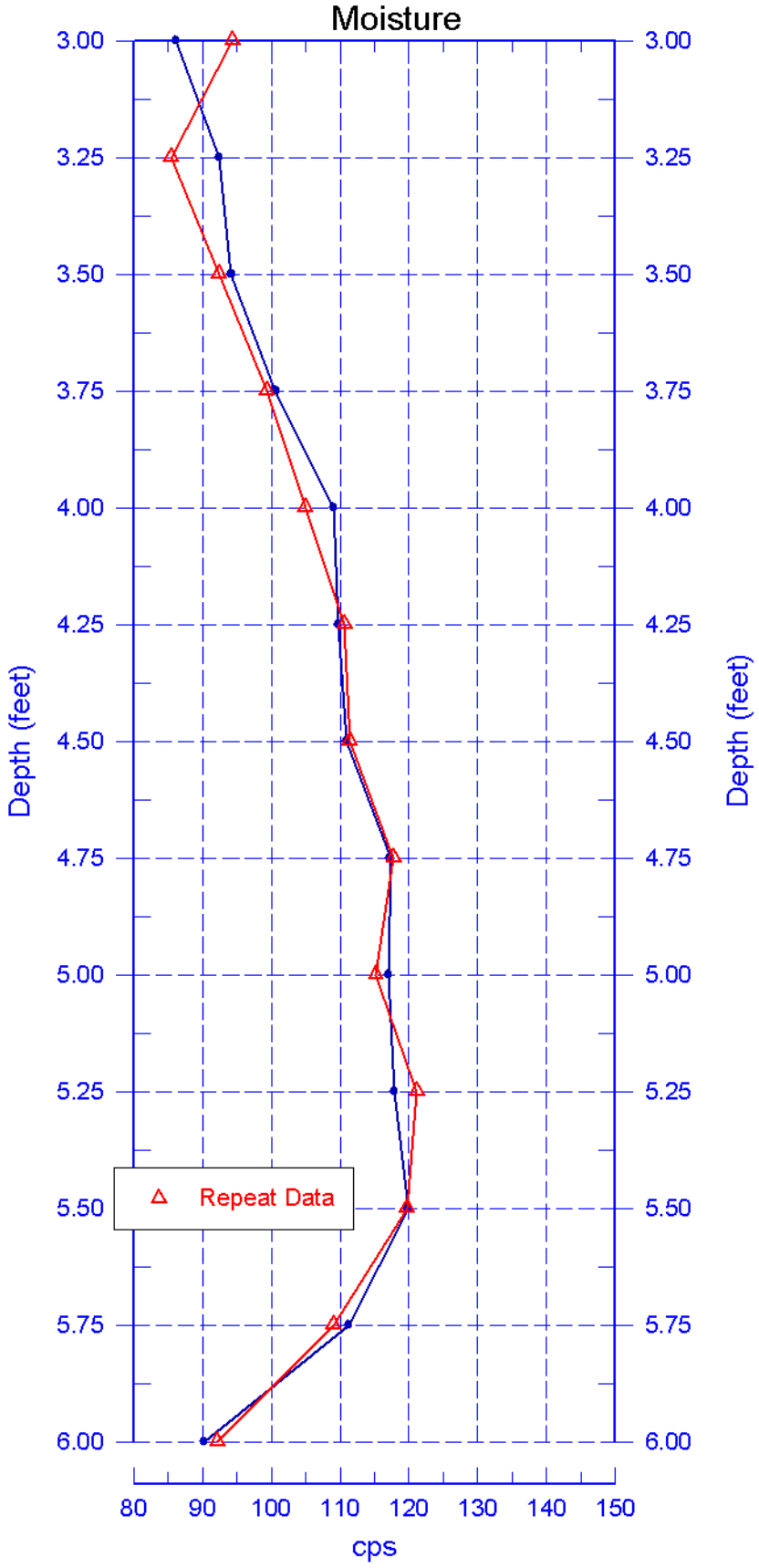
399-2-21 (C6201)
Moisture Repeat Section



Reference - Ground Surface